

VISAYERES ACRON, A NEW GENUS AND SPECIES OF PINNOTHERID CRAB (CRUSTACEA: DECAPODA: BRACHYURA) FROM THE PHILIPPINES

Shane T. Ah Yong

Marine Biodiversity and Biosecurity, National Institute of Water and Atmospheric Research

Private Bag 14901, Kilbirnie, Wellington, New Zealand

Email: s.ahyong@niwa.co.nz

Peter K. L. Ng

Department of Biological Sciences, National University of Singapore, Kent Ridge

Singapore 119260, Republic of Singapore

Email: dbsngkl@nus.edu.sg

ABSTRACT. – A new genus and species, *Visayeres acron*, is recognised for an unusual pinnotherid crab found inside *Lithophaga* (Mollusca: Bivalvia) from Panglao, the Philippines. The new genus is characterised by its unique carapace physiognomy in which the dorsum is distinctly raised medially, peaking in a short median carina.

KEY WORDS. – *Visayatheres acron*, new genus, new species, Pinnotheridae, Brachyura, Decapoda, Philippines.

INTRODUCTION

The PANGLAO 2004 Expedition to the Philippines resulted in extensive marine collections, including numerous decapod and stomatopod Crustacea (e.g. Ah Yong, 2004; McLay & Ng, 2005; Ng & McLay, 2005). Among, the Brachyura collected was an unusual pinnotherid crab, living as a commensal within the mantle cavity of the bivalve mollusc *Lithophaga* sp. The new species, which is also referable to a new genus, is described below. The holotype is deposited in the Crustacean Collection of the National Museum of the Philippines, Manila (NMCR). A comparative specimen of *Durckheimia caeca* Bürger, 1895, from Okinawa, is deposited in the Hokkaido University Museum (ZIHU). Measurements of specimens are in millimetres (mm). Carapace length and width are abbreviated cl. and cw., respectively. Morphological terminology generally follows Manning (1993). The walking legs correspond to pereopods 2–5 and are abbreviated as P2–5.

TAXONOMY

PINNOTHERIDAE DE HAAN, 1833

Visayeres, new genus

Type species. – *Visayeres acron*, new species, by present designation.

Diagnosis. – Female: Carapace well calcified; regions undefined; anterolateral margin well-defined; dorsum smooth, glabrous, distinctly raised in midline, peaking at midlength, marked by short longitudinal median carina; dorsal midline irregularly convex in profile; surface sloping evenly from median carina to margins giving appearing flat-conical in anterior view. Eyes visible in dorsal view. Third maxilliped with ischium and merus indistinguishably fused; palp 3-segmented; carpus shorter than propodus; propodus spatulate; dactylus digitiform, inserting near proximal third of propodal margin. Walking legs symmetrical from left to right; dactyli subequal and similar, falcate with spiniform apices. Abdomen seven-segmented. Male: unknown.

Etymology. – Derived from an arbitrary combination of the regional name for the area in which the species was found, Visayas, and the Latin suffix, *-theres*, a commonly used suffix for many pinnotherid genera. Gender masculine.

Remarks. – *Visayeres*, new genus, is unique in its carapace physiognomy whereby the anterolateral margins are sharply defined and the dorsum is distinctly raised medially, peaking in a short, longitudinal, median carina. The presence of a distinct median carina or blunt prominence on the carapace is rare in Pinnotheridae, being otherwise present only in *Durckheimia* de Man, 1889 (with a carina) or *Xanthasia* White, 1846 and *Tridacnatheres* Ah Yong & Ng, 2005 (both with a blunt prominence). *Xanthasia* is immediately

distinguishable from *Visayeres*, *Durckheimia* and *Tridacnatheres* by its two- instead of three-segmented third maxilliped palp. *Tridacnatheres* is readily distinguishable from *Visayeres* by numerous features: the anterolateral carapace margins form a rounded, thickened rim rather than a well-defined, near cristate edge; the dorsal prominence of the carapace is a blunt, irregularly rounded projection rather than a longitudinal carina; the overall carapace surface is strongly irregular, rather than smooth; and the walking legs are markedly dissimilar in length with the P3 merus almost twice as long as the P4 merus, versus about 1.3 in *Visayeres*.

Durckheimia and *Visayeres* are readily distinguished by the form of the median carina and anterolateral margins of the carapace. In *Durckheimia*, the median carina is cristate, extending for almost the full carapace length, and the anterolateral margins are lamellate and upturned (Ahyong & Ng, 2005). In *Visayeres*, the median carina of the carapace is short and the anterolateral margins of the carapace are well-defined but not lamellar. Despite the differences between *Visayeres* and *Durckheimia*, we believe them to be closely related. In *Durckheimia*, with increasing size, the median carina and lateral margins of the carapace become more prominent, and the front becomes less protruding (Ahyong & Ng, 2005). The orbits of juvenile *Durckheimia* are positioned on the carapace margin, and with increasing size, become submarginal as the front and 'true' anterior margin

merges with the anterior lamella. In many respects, adult *Visayeres* resembles juvenile *Durckheimia* without lamellar anterolateral carapace margins, and with the margins flanking the median carina evenly sloped rather than a concave (compare Fig. 1B, C, K). Moreover, the type species of *Visayeres* is mature at half the size of adults of *Durckheimia* (3.0 mm cl. versus 6.1–9.0 mm cl.) (Ahyong & Ng, 2005). Thus, *Visayeres* is possibly paedomorphic with respect to *Durckheimia*. Adults of both genera share a median carina on the carapace, marked by an emargination at the midlength, in addition to a three-segmented third maxilliped palp and smooth, left-right symmetrical walking legs with subequal and similar dactyli.

***Visayeres acron*, new species**
(Fig. 1A–J)

Type material. – Holotype, NMCR, female (cl. 3.0 mm, cw. 3.2 mm), west of Bacayon, Bohol Island, Visayas, the Philippines, 9°35.1'N 123°51.2'E, from mantle cavity of *Lithophaga* sp., station T6, 34–82 m, trawl, coarse muddy sand with large sponges, coll. PANGLAO 2004 Expedition, 2 Jun.2004.

Description of holotype. – Carapace glabrous, slightly broader than long. Front produced, anterior margin transverse. Anterolateral margins well defined. Dorsum distinctly raised

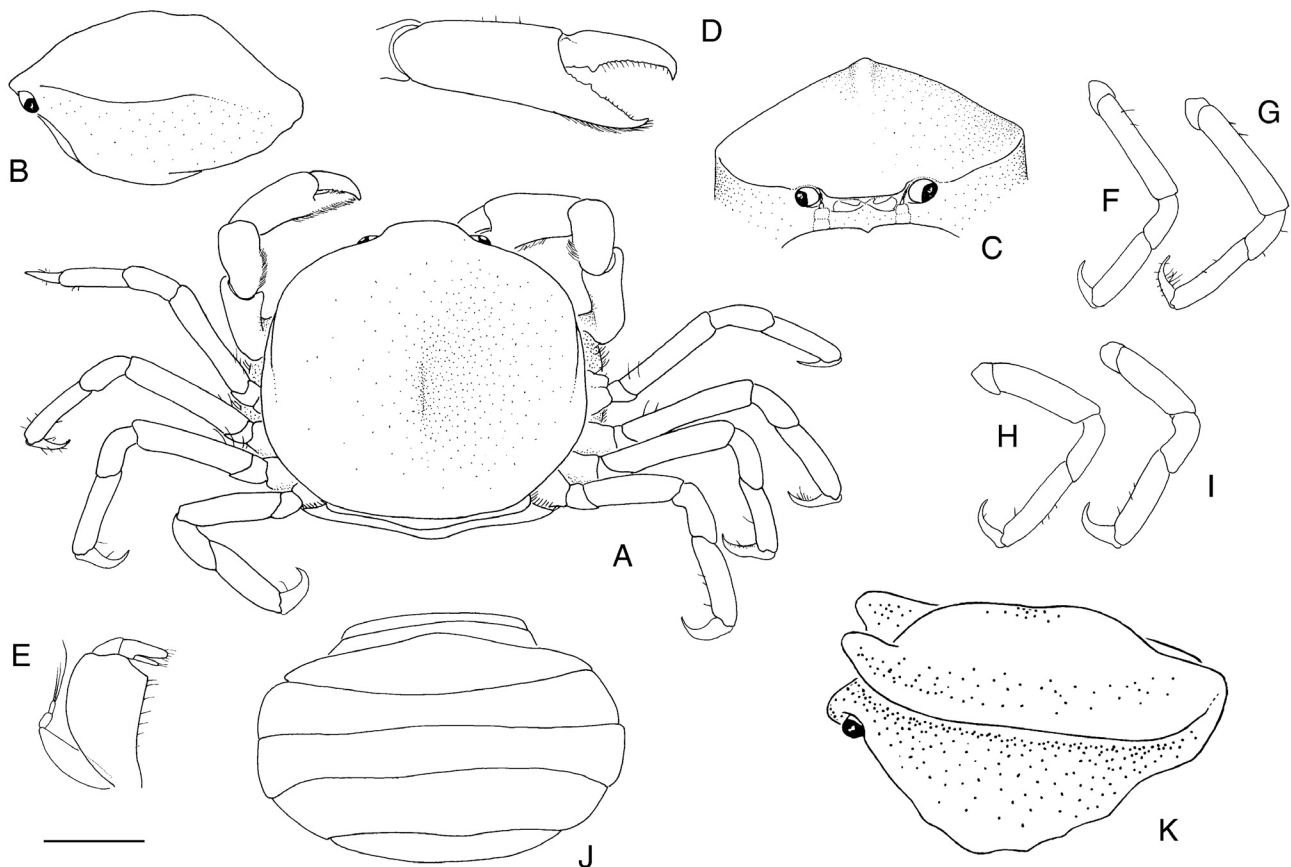


Fig. 1. A–J, *Visayeres acron*, new genus, new species, female holotype, cl. 3.0 mm, cw. 3.2 mm, NMCR; K, *Durckheimia caeca* Bürger, 1895, juvenile female, cl. 4.2 mm, cw. 4.0 mm, Okinawa, ZIHU-828; A, dorsal view; B, K, carapace, left lateral view; C, carapace, anterior view; D, right cheliped; E, right third maxilliped; F–I, walking legs 1–4. J, abdomen. Scale bars: A–C, F–K = 1.0 mm, D = 0.8 mm, E = 0.6 mm.

in midline, peaking at midlength, marked by short, longitudinal median carina; dorsal midline irregularly convex in profile, with shallow emargination at midlength; surface sloping evenly from median carina to margins. Antennular sinus smaller than orbit; antennules folded slightly obliquely. First two antennal segments fused to epistome. Eyes visible in dorsal view, filling orbit, cornea pigmented (Fig. 1C).

Third maxilliped (Fig. 1E) with ischiomerus about half as wide as long; inner margin sparsely setose, distal margin with prominent angle; outer margin strongly convex. Carpus shorter than propodus. Propodus spatulate, longer than wide, gently tapering to blunt, setose apex. Dactylus digitiform, distally setose, inserted slightly proximal to propodal midlength, apex falling short of propodal apex. Exopod with straight inner margin and convex outer margin; flagellum 2-segmented, distal segment setose.

Chelipeds symmetrical (Fig. 1A, D). Dactylus and pollex relatively straight, crossing distally, occlusal margins crenulate, with blunt proximal projection; pollex with fringe of short setae on inner ventral margin. Propodus dorsal margin about 1.2 times longer than dactylus; ventral margin relatively straight. Carpus with setose inner proximal margin.

Walking legs (Fig. 1A, F–I) similar in form, symmetrical from left to right, with few scattered setae; relative lengths in decreasing order $P3 > P4 > P2 > P5$. Dactyli subequal, similar, sparsely setose (densest on P3); apices spiniform, becoming increasingly falcate posteriorly; about half-length of propodi. Propodi about 1.5 times length of carpi. Meri longer and slightly deeper than other segments.

Abdomen (Fig. 1J) broader than long, fully expanded, covering thorax, reaching base of third maxilliped; comprising 7 free segments (including telson), widest at fifth segment.

Etymology. – Derived from the Greek, *akron*, meaning peak, summit, alluding to the median crest on the carapace. The name is used as a noun in apposition.

Host. – The specimen was collected from an unidentified species of bivalve mollusc, *Lithophaga* sp., found among sponges and rocks.

Remarks. – *Visayeres acron*, new genus, new species, was collected from the bivalve mollusc, *Lithophaga* sp. The species evidently matures at a small size, being mature at only 3.0 mm cl. as indicated by the fully expanded abdomen of the holotype. Interestingly, one pinnotherid species previously placed in *Durckheimia*, *D. besutensis* Serène, 1967, also occupies a similar host to that of *V. acron* (see Serène, 1967). Serène's species, however, lacks a median carapace carina and differs in numerous other features; it was made the type of a new genus, *Serenotheres*, by Ah Yong & Ng (2005).

Distribution. – Presently known only from the type locality.

ACKNOWLEDGEMENTS

The specimen was collected during the PANGLAO 2004 Expedition jointly organised by the Muséum national d'Histoire naturelle, Paris (MNHN), the University of San Carlos (USC), and the Raffles Museum of Biodiversity Research, National University of Singapore. We thank the TOTAL Foundation for their financial support that made the expedition possible; Philippe Bouchet (MNHN) and Danilo Largo (USC) for inviting the second author to participate, Rudo Von Cosel and Bertrand Richer de Forges who supervised the trawling on the San Carlos University research vessel "Heinrich Schoening" and Yuri Kantor whose dissections of molluscs obtained the specimen. We thank H. Kajihari and S. Mawatari (both ZIHU) for the loan of specimens. We also thank Tohru Naruse and Darren Yeo for their constructive comments on the manuscript. The first author gratefully acknowledges the support from a Visiting Fellowship from the National University of Singapore and Biosecurity New Zealand (contract ZBS2005-24).

LITERATURE CITED

- Ahyong, S. T., 2004. New species and new records of stomatopod Crustacea from the Philippines. *Zootaxa*, **793**: 1–28.
- Ahyong, S. T. & P. K. L. Ng, 2005. Review of *Durckheimia* and *Xanthasia*, with descriptions of two new genera (Decapoda: Brachyura: Pinnotheridae). *Journal of Crustacean Biology*, **25**(1): 116–129.
- Bürger, O., 1895. Ein Beitrag zur kenntniss der Pinnotherinen. *Zoologische Jahrbücher, Abtheilung für Systematik, Geographie und Biologie der Thiere*, **8**: 361–390, Pls. 9, 10.
- De Haan, W., 1833–1850. Crustacea. In: P.F. von Siebold (ed.), *Fauna Japonica sive Descriptio Animalium, quae in Itinere per Japoniam, Jussu et Auspiciis Superiorum, qui Summum in India Batava Imperium Tenent, Suscepto, Annis 1823-1830 Collegit, Notris, Observationibus et Adumbrationibus Illustravit*: i–xxxii, ix–xvi, 1–243, plates A–J, 1–Q, 1–55, circ. tab. 2. Lugduni-Batavorum (Leiden).
- Man, J. G., de., 1889. Über einige neue oder seltene indopacifische Brachyuren. *Zoologische Jahrbücher, Abtheilung für Systematik, Geographie und Biologie der Thiere* **4**: 409–452, Pls. 9–10.
- Manning, R. B. 1993. West African pinnotherid crabs, subfamily Pinnotherinae (Crustacea, Decapoda, Brachyura). *Bulletin du Muséum national d'Histoire naturelle, Paris, series 4*, **15**: 125–177.
- McLay, C. L. & P. K. L. Ng, 2005. On a collection of Dromiidae and Dynomenidae from the Philippines, with description of a new species of *Hirsutodromene* McLay, 1999 (Crustacea: Decapoda: Brachyura). *Zootaxa*, **1029**: 1–30.
- Ng, P. K. L. & C. L. McLay, 2005. *Dicranodromia danielae*, a new species of homolodromiid crab from the Philippines (Crustacea: Decapoda: Brachyura). *Zootaxa*, **1029**: 39–46.
- Serène, R., 1967. Sur deux espèces nouvelles de brachyours (Crustacés Décapodes) et sur une troisième peu connue, récoltées dans la région Malaise. *Bulletin du Muséum national d'Histoire naturelle, Paris, 2nd series*, **38**: 817–827, Figs. 1–7, Pls. 1–2. [Dated 1966, published 1967].
- White, A., 1846. Notes on four new genera of Crustacea. *Annals and Magazine of Natural History*, **18**: 176–178.